

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A recording medium storing an executable data structure for managing reproduction by a reproduction apparatus of ~~at least~~ video data having multiple reproduction paths recorded on the recording medium, comprising:

one or more management files for managing reproduction of the video data by the reproducing apparatus, the management file being separate from a clip file storing the video data, each clip file being associated with each management file, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths, the management file storing at least one entry point map associated with one of the multiple reproduction paths ~~associated with each reproduction path~~, each entry point map for identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of an ~~the~~ entry point to a presentation time stamp of the entry point, ~~the one or more management files being separate from a data file storing the video data,~~

wherein the entry point map includes path change information for managing changing of reproduction paths by the reproducing apparatus, the path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted in relation to the associated entry point and another field for identifying where changing reproduction [[ing]] paths is permitted in relation to the associated entry point.

2. (Cancelled)

3. (Previously Presented) The recording medium of claim 1, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

4. (Currently Amended) The recording medium of claim 3, further comprising:
~~a the data clip file having at least the video data recorded therein, and at least a~~
portion of the video data being multiplexed on a unit of video data basis.

5. (Currently Amended) The recording medium of claim [[4]] 1, wherein the multiple reproduction paths of video data are different camera angles of video data.

6. (Previously Presented) The recording medium of claim 3, wherein each unit of video data starts with an I-picture.

7. (Previously Presented) The recording medium of claim 3, wherein each unit of video data starts with a closed group of pictures (GOP).

8-14. (Cancelled)

15. (Currently Amended) The recording medium of claim 3, wherein the entry point maps are aligned in time.

16. (Cancelled)

17. (Currently Amended) The recording medium of claim 3, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, the another field associated with the entry point indicates a start position of a data packet of the video data.

18. (Currently Amended) A method of recording a data structure for managing reproduction of at least video data having multiple reproduction paths on a recording medium, comprising:

recording at least one entry point map associated with one of the multiple reproduction paths in one or more management files of the recording medium, ~~the entry point map associated with each reproduction path,~~ each entry point map for identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of ~~the an~~ entry point to a presentation time stamp of the entry point, the ~~one or more~~ management files being separate from a ~~data clip~~ file for storing the video data, each clip file being associated with each management file, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths,

wherein the entry point map includes path change information having a

plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted in relation to the associated entry point and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point.

19. (Currently Amended) A method of reproducing a data structure for managing reproduction of ~~at least~~ video data having multiple reproduction paths recorded on a recording medium, comprising:

reproducing management information from one or more management files of the recording medium, the management information including at least one entry point map associated with one of the multiple reproduction paths ~~associated with each reproduction path~~, each entry point map for identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping data packet address of ~~the an~~ entry point to a presentation time stamp of the entry point, ~~the one or more management files being separate from a data clip file for storing the video data, each clip file being associated with each management file, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths,~~

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted in relation to the associated entry point and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point; and

reproducing the video data based on the management information,
wherein the reproducing step further including changing a reproduction path from a current reproduction path to a requested reproduction path based on the path change information if the changing reproduction path is permitted.

20. (Currently Amended) An apparatus for recording a data structure for managing reproduction of ~~at least~~ video data having multiple reproduction paths on a recording

medium, comprising:

~~an optical pickup~~ a recording unit configured to record data on the recording medium; and

a controller, operably coupled to the ~~optical pickup~~ recording unit, configured to control the ~~optical pickup~~ recording unit to record the video data having multiple reproduction paths on the recording medium,

the controller configured to control the ~~optical pickup~~ recording unit to record at least one entry point map associated with one of the multiple reproduction paths in one or more management files of the recording medium, ~~the entry point map associated with each reproduction path~~, each entry point map for identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of ~~the an~~ an entry point to a presentation time stamp of the entry point, ~~the one or more management files being separate from a data clip file storing the video data, each clip file being associated with each management file, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths;~~ and

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted in relation to the associated entry point and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point.

21. (Currently Amended) An apparatus for reproducing a data structure for managing reproduction of ~~at least video data~~ having multiple reproduction paths recorded on a recording medium, comprising:

~~an optical pickup~~ a reproducing unit configured to reproduce data recorded on the recording medium;

a controller, operably coupled to the ~~optical pickup~~ reproducing unit, configured to control the ~~optical pickup~~ reproducing unit to read an entry point map associated with one of the multiple reproduction paths from one or more management files of the recording medium, ~~at least one entry point map associated with each reproduction path~~, each entry point map for identifying a plurality of entry points in

the video data for the associated reproduction path, the entry point map mapping a data packet address of ~~the~~ an entry point to a presentation time stamp of the entry point, the ~~one or more~~ management files being separate from a data-clip file storing the video data, each clip file being associated with each management file, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths; and,

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted in relation to the associated entry point and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point; and

the controller configured to control the reproducing unit to reproduce the video data based on the one of more management files, wherein the controller is further configured to control the reproducing unit to reproduce a requested reproduction path based on the path change information if the changing reproduction path from a current reproduction path to the requested reproduction path is permitted.

22. (Previously Presented) The method of claim 18, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

23. (Currently Amended) The method of claim 22, wherein at least a portion of the video data is recorded in a data-clip file with being multiplexed on a unit of video data basis.

24. (Currently Amended) The method of claim ~~23~~18, wherein the multiple reproduction paths of video data are different camera angles of video data.

25-26. (Cancelled)

27. (Currently Amended) The method of claim ~~26~~19, wherein the multiple reproduction paths of video data are different camera angles of video data.

28. (Previously Presented) The apparatus of claim 20, wherein fields for permitting a change in a same associated reproduction path define one or more units of video data.

29. (Previously Presented) The apparatus of claim 20, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, the another field associated with the entry point indicates a start position of a data packet of the video data.

30. (Currently Amended) The apparatus of claim 21, ~~wherein fields for permitting a change in a same associated reproduction path define one or more units of video data~~ the reproducing unit includes an optical pickup to reproduce the video data.

31. (Previously Presented) The apparatus of claim 21, wherein the another field associated with the entry point indicates a start position of a unit associated with the entry point.

32. (Currently Amended) The recording medium of claim 41, ~~wherein the data file stores a plurality of clip files, each clip file associated with each reproduction path,~~ each clip file is associated with each entry point map.

33-37. (Cancelled)

38. (Currently Amended) The method of claim 19, ~~further comprising performing the change of the reproduction path based on the path change information if the change is permitted and wherein~~ the current reproduction path is maintained until a position at which exiting the current reproduction path is permitted.

39. (Cancelled)

40. (Currently Amended) The apparatus of claim 20, ~~wherein the controller is configured to perform the change of the reproduction path if the change is permitted and current reproduction path is maintained until a position at which exit of the current reproduction path is permitted~~ the recording unit includes an optical pickup

to record the video data.

41. (Cancelled)

42. (Currently Amended) The apparatus of claim 21, wherein ~~the controller is configured to perform the change of the reproduction path if the change is permitted and~~ the current reproduction path is maintained until a position at which exiting the current reproduction path is permitted.

43. (Currently Amended) The apparatus of claim 20, further comprising:
an encoder configured to encode the ~~at least~~ video data having multiple reproduction paths,
wherein the controller is configured to control the ~~optical pickup~~ recording unit to record the encoded video data.

44. (New) The recording medium of claim 1, further comprising:
at least one playlist file, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

45. (New) The method of claim 18, further comprising:
recording playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

46. (New) The method of claim 19, further comprising:
reproducing playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

47. (New) The apparatus of claim 20, wherein the controller is configured to control the recording unit to record playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

48. (New) The apparatus of claim 21, wherein the controller is configured to read playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.